

Final  
Annual Assessment Report  
Of  
Argonne National Laboratory  
For The Period  
October 1, 1999 through September 30, 2000  
(Fiscal Year 2000)

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## **1.0 Summary Evaluation:**

In accordance with the performance-based contract with DOE, the University of Chicago is responsible for the management and operation of Argonne National Laboratory (ANL). This contract requires DOE to perform an annual performance evaluation of the University of Chicago for that contract work. The annual payment of fee to the University of Chicago is contingent on the results of the annual DOE evaluation. Since the inception of the ANL performance-based contract in 1995, the University of Chicago performance has been rated very highly by the sponsoring DOE Program Offices and by the DOE Chicago Operations Office Argonne Area Office (CH-AAO). For FY-00, the Science Performance Measure and three Critical Operations Performance Measures are fee-bearing. The contract also contains fifteen System Assessment Measures (SAMs) for the General Operations of ANL. These fifteen SAMs are not fee-bearing.

For FY-00, the University of Chicago/ANL Science performance was rated as "Outstanding" (the highest rating) and for the "Critical Operations" of the ANL Facility, the University of Chicago/ANL received an "Excellent" (the second highest grade) for Environment, Safety, and Health and an "Outstanding" for Infrastructure. Also in FY-00, a new Leadership Performance Measure was added to the contract. DOE CH-AAO rated the University of Chicago/ANL as "Good" in Leadership. For the General Operations SAMs, that do not directly impact fee, the University of Chicago received an overall "Excellent" rating.

## **2.0 Background:**

Beginning in June 1995, the DOE has had a performance-based contract with the University of Chicago for the management and operation of Argonne National Laboratory (ANL). Effective October 1, 1999, the performance-based Contract between the United States DOE and the University of Chicago was renewed for a second term. The success of the performance-based concept implemented in the previous contract (October 1995–September 1999) led to the decision to continue the performance-based management approach.

In accordance with the terms of the ANL contract, the DOE CH-AAO assesses the performance of the University of Chicago on an annual basis. For FY-00, Appendix B of the ANL contract includes two performance categories. These two categories are Performance Measures and SAMs. Both of these performance categories are evaluated separately using a pre-defined process, including DOE CH-AAO expectations, and an adjectival rating is assigned. The first performance category, "Performance Measures", is tied directly to the annual fee earned by the University of Chicago. For FY-00, there are four Performance Measures, which include a Performance Measure for Science and three Critical Operations Performance Measures. A second performance category, "Systems Assessment Measures" is assessed and rated by DOE CH-AAO but are not tied directly to fee. The fifteen SAMs represent an evaluation of the "General Operations" of the ANL facility. The FY-00 contractual Performance Measures and a listing of the individual SAMs are included in Reference A to this report.

For FY-00, the Performance Measures that directly impact fee include four areas: 1) Science, 2) Environment, Safety, and Health, 3) Infrastructure, and 4) Leadership. The

latter three performance measures are considered Critical Operations Performance Measures because they are deemed to have the most significant impact on the overall operation of ANL. The SAMs, which do not directly impact fee, describe fifteen areas that are important to the general operations of the Lab. For these fifteen SAMs, DOE CH-AAO provides performance expectations at the beginning of the year and monitors ANL performance during the year. At the end of the fiscal year, DOE CH-AAO assesses ANL performance against those expectations.

Appendix B of the ANL contract requires the University of Chicago to perform an annual self-assessment that is considered by the DOE CH-AAO in its overall evaluation of the University of Chicago performance. For the Science Performance Measure, the University of Chicago conducts a highly regarded peer review process as its self-assessment. Copies of the documented peer reviews are provided to CH-AAO and appropriate DOE-HQ Program sponsors. A significant component of the DOE CH-AAO annual performance evaluation is a separate assessment of the science and technology work by the sponsoring DOE Headquarters (HQ) Program Offices. The DOE-HQ Program sponsor evaluation includes the results of the University of Chicago Science self-assessment.

For each of the three Critical Operations Performance Measures and the fifteen General Operations SAMs, the University of Chicago provides a self-assessment to CH-AAO as input to the CH-AAO annual performance evaluation. The self-assessment addresses specific topics outlined in individual understandings between the Laboratory and DOE CH-AAO functional counterparts. The DOE CH-AAO assessment of each area consists of objective ratings of the Contract performance expectations for each area and descriptions of more subjective aspects that include significant accomplishments, opportunities for improvement, and the results of other appraisals. The University of Chicago Self-Assessment is included as a Reference to this report.

For the FY-00 Performance Measures, ANL achieved a rating of "Outstanding" (the highest rating possible) for Science. For the three Critical Operations Performance Measures, ANL received an "Excellent" rating (the second highest rating possible) for Environment, Safety and Health an "Outstanding" rating in Infrastructure and an "Good" rating for Leadership. For the Science, Leadership, and Infrastructure Performance Measures, an Outstanding rating means that ANL significantly exceeds the standard of performance. For the Environment, Safety and Health Performance Measure, the Excellent rating means that ANL exceeds the standard of performance. For the Leadership Performance Measure a "Good" rating means that the University of Chicago and ANL meet the standard of performance. A fee table in the contract, negotiated each year along with the individual performance measures, is used to determine the annual monetary fee based on the assigned adjectival ratings. The overall process for evaluating ANL performance and determining the annual fee is described in Attachment A to this report.

The fifteen SAMs are evaluated separately, but a summary assessment and rating for General Operations is also developed. The summary assessment performed by DOE CH-AAO determined that an Excellent rating means that ANL's overall performance in General Operations exceeds the standard of performance established for management and operating contractors for multi-purpose laboratories.

For some Performance Measures and SAMs, there remains room for improvement but, in general, better performance in other areas more than offset these areas in need of improvement.

### **3.0 Evaluation of Performance Measures**

Table 1 is a summary of the four FY-00 Performance Measure ratings for ANL. The ratings assigned to each of these four Performance Measures (three in Critical Operations and one in Science) have a direct impact on the fee calculations.

#### **3.1 Science**

An overall rating of "Outstanding" was assigned to ANL for their performance in the area of Science. This critical area represents 70% of the total fee for FY-00. The Science Performance Measure is based on the following DOE-HQ evaluations:

- Office of Science evaluation dated January 25, 2001
- Office of Nuclear Energy, Science evaluation, dated January 12, 2001
- Energy Efficiency and Renewable Energy, dated December 20, 2000
- Office of Arms Control and Nonproliferation dated January 9, 2001

These evaluations are included as Attachment B to this report. The highly regarded peer review process conducted by the University of Chicago during FY-00 supports this overall rating of "Outstanding" in Science. A list of the Peer Review Reports is included as Attachment C. Some specific ANL accomplishments during FY-00 include:

Operation of the Advanced Photon Source continues to exceed expectations with beam availability to users exceeding 96%.

Operation of the Intense Pulsed Neutron Source is notable with very high reliability and availability of service to users.

Operation of the ATLAS Facility continues to be very successful and the staff of the Physics Division has served as leaders in the area of nuclear structure physics.

ANL receive three R&D 100 awards. No other DOE Laboratory received more than three.

Construction of the Basic Energy Sciences Synchrotron Radiation Center continues on schedule with the commissioning of the undulator and bending magnet beamlines and start of operation of the wiggler beamline.

Operation of the structural biology center has been outstanding. This includes the commissioning of the second beamline and full utilization of the first beamline under tight budget constraints.

Research in the area of microbial genomics is of the highest quality, using state-of-the art approaches to genome analysis including characterizing unknown genes and regulatory pathways in microbes.

Initiated the EBR-II Spent Fuel Treatment processes at ANL-W and successfully achieved the production rates for the Sodium Processing Facility.

The Office of Science (SC) provides over one-half of the DOE-HQ funding to ANL and has consistently recognized the high quality of Science work at ANL. For FY-00, SC has rated ANL as "Outstanding" for Science work. The level of success in constructing and operating nuclear research and related facilities has been rated overall as "Outstanding" by the Office of Nuclear Energy, Science, and Technology (NE). ANL also received an "Outstanding" from the Office of Energy Efficiency and Renewable Energy (EE) with special emphasis on the EE programs for automotive improvements. The Office of Arms Control and Nonproliferation (NN) assigned an "Outstanding" rating to ANL for the work performed by ANL in reduced enrichment for research and test reactors program and for the spent fuel disposition program.

Each of the program sponsors commented on areas for possible improvement in FY-01. The Office of Nuclear Energy, Science, and Technology commented on the need for improvements in safeguards and security and full implementation of the Price Anderson Amendments requirements. The Office of Science commented on the need for improvements in cyber security and implementation of the ANL Integrated Safety Management System. Some additional policy interaction is desired by the Office of Arms Control and Nonproliferation, while the Office of Energy Efficiency and Renewable Energy commented on the need for continued spirit of cooperation on vehicle modeling.

CH-AAO accepts the evaluations of the DOE-HQ Program Sponsors for the evaluation of Science work. No program or operational issues were considered significant enough by the DOE CH-AAO to work with DOE-HQ to change the final rating for Science Performance Measure.

### **3.2 Leadership**

Background:

The Leadership Performance Measure focuses on five objectives:

- 1) skilled Laboratory leaders
- 2) effective succession planning
- 3) enhanced ANL business operations
- 4) efficient operations resulting from management assessments and initiatives
- 5) strategic guidance in key ANL mission areas

The Leadership Performance Measure accounts for 5% of the ANL fee. The Leadership Performance Measure is new for FY-00 and requires an acceptable rating for all five objectives to achieve an overall "Outstanding" rating for the Leadership Performance Measure. For each unacceptable rating against an objective, the overall Leadership Performance Measure rating is reduced one level. In addition, DOE conducts an assessment of the University of Chicago Leadership rating based on an accumulative effect of accomplishments and issues during the performance period.

Summary of Accomplishments:

The University of Chicago selected an outstanding Laboratory Director, Dr. Hermann Grunder, prior to the end of FY-00. The management attention that has been directed at the ANL-W work in FY-00 leading to the completion of the EBR-II sodium processing and initiating the electrometallurgical process has been a particularly notable success. A specific accomplishment by the University of Chicago was the addition of five new distinguished members to the Board of Governors including a Nobel Laureate and senior managers from Lucent Technologies and IBM. In addition, the University of Chicago continued with its notable peer review process and reviewed numerous ANL business systems. The Scientific and Technical Advisory Committee (STAC) of the Board of Governors was also involved in reviews of the ANL science programs to ensure that they supported the strategic direction of the Laboratory.

#### Issues and Concerns:

A number of issues were identified in essentially all of the five objectives. However, DOE did not rate any of the five Leadership objectives as "unacceptable". Issues arose at the beginning of FY-00 concerning the lack of a permanent ANL Director. While competent ANL managers were assigned to this key position, the ability of these individuals to actually "lead" or "direct" the Laboratory in new directions or to maintain a consistent direction was hampered by the recognition that they were not going to be the permanent ANL Director. In addition, the direct involvement of the University of Chicago in assisting the Interim Laboratory Director was very limited. This issue was identified in the DOE CH-AAO Mid-Year assessment of ANL. During the year, these concerns were elevated with a loss of key personnel and the continued need for "acting" manager positions in several key areas, including the Chief Operating Officer and Chief Legal Counsel.

The University of Chicago did not provide adequate direction to ensure that the Laboratory maintained generally accepted management systems in the areas of personal property, cyber-security, and safeguards and security. DOE certification of the Integrated Safety Management System was delayed due to deficiencies identified during the validation, although these deficiencies were corrected by the end of the fiscal year, as required. There was some concern that the University of Chicago was not sufficiently involved in the development of ES&H policy of the Laboratory. The Office of Science has stated in their January 25, 2001 performance evaluation of ANL management that "... there are two areas of Argonne's operation that need sustained vigilance so that the science and technology programs are not affected: Integrated Safety Management and unclassified cyber security."

The University of Chicago did not provide strategic guidance to ANL in the areas of environmental, safety, and health to ensure that the ANL radiological program and the ANL quality assurance program met the DOE requirements. The lack of compliance was evident during the Price Anderson Amendments Act Enforcement Conference in November 1999. The Laboratory's approach to the Price Anderson Amendment Act non-compliances led to additional attention by the regulators and a Notice of Violation. The Office of Nuclear Energy stated in their annual appraisal of ANL that they were concerned about the management of the ANL Price Anderson Amendments Act performance and the safeguards and security program at ANL-W.

## Conclusion:

While the University of Chicago received an acceptable rating for the five Leadership objectives, issues were identified in most of the Leadership objectives. Due to the cumulative effect of these Leadership issues, a rating of "Good" for Leadership is warranted. A "Good" rating is defined as "meets the standard of performance; tasks are carried out in an acceptable manner – timely, efficient and economical; deficiencies do not substantially affect performance."

### **3.3 Environment, Safety, and Health (ES&H)**

The objective of the ES&H Program at ANL is to maintain the ANL Integrated Safety Management System (ISMS). The goal of ISMS is to prevent injuries, fatalities, and incidents of illness by eliminating worker exposure to hazards and ensuring environmental quality. ES&H is one of the three FY-00 Critical Operations Performance Measures. Appendix B also includes ES&H as a System Assessment Measure. DOE-CH-AAO rating for ES&H is an "Excellent". ES&H performance accounts for 20% of the fee.

While the Appendix B expectations for measuring ES&H performance are important in determining the overall quality of the ANL ES&H Program, these expectations do not adequately represent the complete ES&H performance picture. DOE CH-AAO believes the ESH rating should be an "Excellent" for both the ES&H Critical and General Operations. The bases for this rating include the significant failures to adequately implement two key ES&H programs across the spectrum of operations. During FY2000 ANL failed to implement adequate programs for compliance with the Price Anderson Amendments Act (PAAA) rules at both East and West sites. Several deficiencies were also found in the Laboratory's implementation of the ISMS during FY2000, which had to be resolved prior to obtaining ISMS approval by DOE. The PAAA issues have been noted in the DOE CH-AAO annual assessment and in periodic reviews for the past three years and these issues have not been fully resolved at either site. Based on the recognition of numerous opportunities for improvement, an "Excellent" rating is appropriate.

To identify other factors that impacted the overall ANL ES&H rating, DOE CH-AAO reviewed the ANL self-assessment for the following:

- a. Any significant issues that ANL has not identified in their self-assessment that would support an increase or reduction in their final rating for the assigned functional area.
- b. Any significant issues that ANL has identified in their self-assessment that were either under-assessed or over-assessed in determining a final rating for the assigned functional area.
- c. An analysis of self-assessment quality and completeness.

The ANL Self-assessment Performance Overview states that "Fundamental to the Laboratory's success is how effectively its operations support and enhance the institution as a whole. Laboratory performance across the spectrum of operations - especially with respect to environment, safety and health matters - is essential to supporting and encouraging an institutional environment and support infrastructure that are cost-effective, of high quality, and conducive to performance of world-class research



and development." Despite this recognition, the performance summary for the ESH functional area in both the Critical Operations and General Operations centers on the performance of the ESH Division, as opposed to the overall performance of ANL which includes the line organizations. We concur with the self-assessment that the ESH Division has achieved significant ES&H program enhancements during FY2000 that are worthy of recognition. However, the self-assessment does not adequately address overall Laboratory ES&H performance.

The ANL self-assessment also identified several areas that needed attention, such as greater fire department response, the concern of unreliable laboratory fire suppression systems, and inadequacies in the ergonomic program, but does not offer any resolutions or discussion of compensatory controls. The ANL Environment, Safety, Health and Infrastructure (ESH&I) Plan also identified the need for additional ES&H resources; however, there is no discussion of the resource issue in the FY-00 Self-assessment. The lack of appropriate follow-up and discussion of these important issues with DOE CH-AAO is an indication that ANL's ES&H performance has not yet reached the "Outstanding" level of maturity.

In summary, based on the DOE CH-AAO analysis of the overall ES&H Program at ANL, DOE CH-AAO rates ANL ES&H as "Excellent". CH-AAO believes that a lowering of the ES&H rating one full grade is appropriate. We also believe that an "Excellent" rating is consistent with a number of significant ANL accomplishments during FY-00. It should be noted that ANL ES&H experience against the quantitative ES&H expectations in Appendix B has been noteworthy. Appendix B includes fifteen ES&H expectations. ANL received an "Outstanding" in eleven of them. Generally, ANL has done very well in meeting DOE expectations related to injury and illness data and maintaining environmental quality.

### **3.4 Infrastructure**

Infrastructure includes the construction, upgrades, and maintenance of facilities and infrastructure, as well as, environmental projects. These projects directly support the ANL mission.

Based on performance expectations, the Infrastructure Critical Operations Performance Measure was rated by ANL as "Outstanding". No issues were identified in the ANL self-assessment or other data analyzed by DOE CH-AAO to change that conclusion. The Infrastructure Critical Operations performance accounts for 5% of the FY-00 fee. This performance measure includes ANL activities associated with the environmental management.

ANL continues to be very aggressive in the achievement of cost and schedule baselines for construction and maintenance projects. DOE-HQ conducted an Infrastructure review during November 1999 and determined that ANL continues to have one of the most highly regarded facility infrastructures in the DOE complex.

CH-AAO recognizes that ANL had very significant achievements during FY-00 related to the completion of the CP-5 reactor D&D project, outstanding productivity and cost savings in the ERAP program, award winning performance in Pollution Prevention and Waste Minimization, dramatic improvement in Illinois Environmental Protection Agency

(IEPA) clean-up approvals, outstanding progress towards shipment of contact handled TRU waste, dramatic reduction in inventories of mixed waste, and good SNS progress in instrument definition and baseline development.

The environmental management work at ANL continues to be highly rated. CH-AAO believes that some opportunities for improvement exist in the coordination and integration of environmental management work at ANL, when several ANL divisions are involved. It would be beneficial if ANL proceeded aggressively with the IEPA to expedite restoration of those portions of the ANL site where restoration plans are in place.

CH-AAO agrees with the "Outstanding" rating in the Infrastructure Critical Operations Performance Measure and has seen a continuously improving process for the management of the facility infrastructure over the last several years. A number of reviews, inspections, and audits were conducted during FY-00 that supported the high rating for ANL.

CH-AAO has identified areas that should be considered for continuous improvement in FY-01. These include internal coordination among work elements in the 317 Area, Remote Handled TRU waste management and facility planning, control of radiological materials, working off the legacy waste volumes at ANL, and communication between CH-AAO and ANL particularly concerning ES&H issues. None of these continuous improvement areas warrant a reduction in the overall evaluation of ANL in the Infrastructure.

#### **4.0 Evaluation of System Assessment Measures**

For FY-00, the University of Chicago/ANL self-assessment indicated that their overall rating for the SAMs should be an "Outstanding". The DOE CH-AAO assessment of University of Chicago/ANL performance is that an overall rating of "Excellent" is more appropriate for the SAMs. There were four SAMs where the CH-AAO summary rating differed (lower rating) from the University of Chicago/ANL self-assessment rating. These were:

- |                            |                            |
|----------------------------|----------------------------|
| 1) ES&H                    | (Outstanding to Excellent) |
| 2) Personal Property       | (Outstanding to Good)      |
| 3) Safeguards and Security | (Good to Marginal)         |
| 4) Information Management  | (Outstanding to Excellent) |

Specific, more detailed discussions are provided below. This section is organized by using the DOE-HQ Office of Science expectations and grouping the SAMs by these expectations.

##### **4.1 Leadership Expectation**

The Leadership Expectation includes those management systems that directly involve staff resources, such as the Human Resources and Affirmative Action/Diversity Programs.

For the Affirmative Action/Diversity SAM and based on the performance expectations and self-assessment, ANL rated an "Excellent". There are two specific expectations for

this SAM in FY-00. Program budgets have been stable so very little recruitment is being conducted by ANL at this time. For FY-00, there was an increase for minority professional workforce populations and this expectation received an "Excellent". The percentage of women professional decreased from 21.2% in FY-99 to 20.6% in FY-00, which equates to a "Good" rating. ANL has an extensive outreach program and the Division of Educational Programs supports a variety of activities in recruiting minorities and women. CH-AAO believes that an overall rating of "Excellent" is appropriate.

The overall management of Human Resources continues to be rated as "Outstanding" by both ANL and the DOE CH-AAO based on the Appendix B performance expectations. No significant issues were raised by ANL in the self-assessment, or by DOE CH-AAO during the review of the self-assessment, that would result in a change in this rating. Some notable accomplishments include the employee survey and several process improvements, such as a reduction in HMO health care costs, consolidation of job levels to ensure consistency and quality. In addition, several human resources computer applications such as a web page, making HR Information System available to staff, and automated distribution of staff resumes for internal staff openings made HR information and processes more accessible to ANL staff. As part of the Appendix B expectations, ANL formally tracked twelve measures and also identified three-three internal measures to continually assess the quality of the ANL Human Resources System. CH-AAO provided an overall rating of "Outstanding".

#### **4.2 ES&H Expectation**

Based on the performance expectations under the ES&H SAM, ANL achieved an "Outstanding" rating. Based on the ANL self-assessment, ANL believes that an "Outstanding" rating continues to be appropriate. DOE CH-AAO believes that for ES&H, the numeric grades do not represent the complete performance picture and an "Excellent" rating is more appropriate. As in previous years, CH-AAO chose to closely link the ES&H Performance Measure and the ES&H SAM. The basis for this linkage is that there is only one ES&H Program at ANL. DOE CH-AAO believes that the ANL performance under the Integrated Safety Management System and the Price Anderson Amendments Act Program, discussed above under the ES&H Performance Measure (Section 3.3 of this report) demonstrate that the ANL ES&H Program has not yet achieved a level of maturity consistent with an "Outstanding" rating. Therefore, CH-AAO provided an overall rating of "Excellent" for the ES&H SAM.

#### **4.3 Infrastructure Expectation**

Infrastructure and Safeguards and Security SAMs have been included under the Infrastructure Expectation. The Infrastructure SAM includes:

- 1) milestone schedule performance
- 2) maintenance program
- 3) energy usage
- 4) energy management initiatives

Based on the Appendix B performance expectations and the ANL self-assessment, the Infrastructure SAM was rated by ANL as "Excellent". The Milestone Schedule Performance was the only issue identified by ANL during the self-assessment. The lack

of critical staff on the Spallation Neutron Source (SNS) Project was the key factor to two key missed SNS milestones. This lowered the rating for the milestone schedule performance. No significant issues were identified in the ANL self-assessment or the DOE CH-AAO review of the ANL self-assessment to change the rating. Notable accomplishments include the continued overall effectiveness of the site maintenance management program, the decrease in energy usage, completion of energy management initiatives resulting in cost savings, and the development of a Strategic Facilities Plan. CH-AAO agrees with the overall rating of "Excellent".

The objective of Safeguards and Security program at ANL is to provide the necessary and appropriate protection, at both ANL sites for special nuclear material, information, personnel, and property. Safeguards and Security includes an assessment of the effectiveness of the following sub-programs:

- 1) program planning and management
- 2) protection program operations
- 3) information security
- 4) material control and accountability
- 5) personnel security

For FY-00, based on the Appendix B performance expectations, the Safeguards and Security SAM was rated by ANL as "Marginal". Based on the ANL self-assessment ANL believes that a "Good" rating is appropriate. ANL has identified a number of accomplishments in FY-00. These accomplishments include a satisfactory rating for the ANL-W Counter Intelligence program based on a DOE-HQ inspection, a satisfactory rating for an audit performed by DOE-CH of the ANL-W Special Access Program, the hiring and training of four Security police Officers, the purchase of a Joint Tactical Simulator System for vulnerability assessments, upgrading the ANL-W security vehicles, developing a new physical security plan, and the purchase of several sophisticated instruments to enhance the non-destructive analysis capability at ANL-W.

The DOE CH-AAO rating for ANL performance is based on DOE inspections and appraisals conducted during FY-00 of the 5 ANL Safeguards and Security subprograms listed above. The safeguards and security needs at ANL-W are quite different from ANL-E. A single adjectival rating was developed from a weighted average of results from both ANL-E and ANL-W appraisals. The weighted average considers ANL-W to be about 3 times as important as ANL-E. Using the appraisal rating system defined by Section III.3.j of Appendix B both ANL and DOE CH-AAO determined that the adjectival rating for Safeguards and Security is "Marginal". While the ANL self-assessment indicated that a higher rating was more appropriate, DOE CH-AAO disagrees with an increase in the rating for Safeguards and Security. It is DOE CH-AAO's belief that the accomplishments listed in the self-assessment, while important, were not significant enough to raise the rating.

ANL-W obtained an unsatisfactory rating for the Physical Security Systems (detection and assessment capabilities) and a marginal in the Protection Program management (vulnerability analysis, self-assessment, protection concerns) during the May 15-25, 2000 OA inspection. ANL-W received a Marginal rating from DOE-CH in Program Planning and Management and in the Protection Program Operations subprograms during an April 2000 inspection. As a result ANL-W achieved only about 70% of the

points possible for ANL-W Safeguards and Security. While ANL-W had taken a number of actions to respond to these findings through a variety of compensatory measures, safeguards and security is deemed by DOE-CH-AAO to be a sensitive area with high expectations and where little credit is assigned to corrective actions, after the problems have occurred. Therefore, a "Marginal" rating is assigned to the Safeguards and Security System Assessment Measure.

#### **4.4 Business Operations Expectation**

The Business Operations SAMs include:

- 1) Financial Management
- 2) Information Management
- 3) Personal Property
- 4) Procurement
- 5) Technology Transfer
- 6) Work for Others
- 7) General Law
- 8) Scientific and Technical Information
- 9) Intellectual Property

Based on the performance expectations under the Financial Management, Procurement, General Law, Intellectual Property, Scientific and Technical Information, and Technology Transfer SAMs, ANL achieved an "Outstanding" rating. The DOE CH-AAO review of the ANL self-assessment in these areas supports these ratings. The DOE-CH-AAO evaluation also supports the "Excellent" rating for Work for Others SAM. Compliance and internal controls of these ANL business systems continue to meet DOE requirements. Enhancements in these business systems also continue without increasing the overall staff levels or costs. CH-AAO agrees with the overall rating of "Outstanding" for the above six business systems. While all of these areas were rated as "Outstanding", opportunities for improvement were identified. These improvements include, under Technology Transfer that ANL needs to assign an Ombudsman, as statutorily required. In addition, based on the ANL self-assessment, the responsibility for Davis Bacon compliance would be more meaningful if it was included under Procurement instead of Human Resources where it now occurs. The Human Resources and Affirmative Action/Diversity management systems are addressed under the Leadership expectation.

##### **4.4.1 Information Management System Assessment Measure**

The Information Management performance indicator includes the following five subprograms:

- 1) Y2K Readiness
- 2) Administrative data processing
- 3) Unclassified computer security
- 4) Telecommunications management
- 5) Printing, publishing, library services, records management

The ANL rating is based on the ANL self-assessment because no specific system indicators or compliance items were included as Appendix B expectations. The ANL

self-assessment indicates that an "Outstanding" rating is appropriate for Information Management. While three of these subprograms are considered essentially equal in weight, the Y2K readiness subprogram and the unclassified computer security subprogram are considered to be of higher importance. The most significant issue at ANL at the beginning of FY-00 was Y2K readiness. Considerable effort was focused by ANL on this issue to ensure timely completion. This effort was very successful and the Y2K effort was rated by DOE CH-AAO to be an "Outstanding". Later in FY-00, there was a shift in emphasis to cyber-security, which is part of the unclassified computer security program. A number of issues were identified during reviews, conducted during FY-00 by the General Accounting Office and the DOE Office of Independent Oversight and Performance Assurance. These issues represented vulnerabilities in the ANL computer systems that an intruder could exploit. ANL has developed a Cyber Security Program Plan (CSPP) to address these issues and vulnerabilities. This CSPP was approved in early FY-01. From the viewpoint of reportable incidents during FY-00, ANL has had few serious intrusions in their computer systems. However, because of delays in responding to the cyber-security issues, DOE CH-AAO believes that the unclassified computer security subprogram should be rated as a "Marginal". The net effect is to lower the overall ANL rating to an "Excellent".

#### **4.4.2 Personal Property System Assessment Measure**

The Appendix B expectations for the Personal Property SAM focuses on implementing the Balanced Scorecard and developing a High Risk Property Program for DOE validation. Management of high-risk personal property is a requirement under the DOE Property Management Regulations. The University of Chicago/ANL self-assessment rated their performance for Personal Property as an "Outstanding". DOE CH-AAO does not agree with this rating. DOE CH-AAO has identified numerous weaknesses in the management of the ANL Personal Property Management Program and with the results of the self-assessment. The self-assessment did not include the results of the Balanced Scorecard Program or the required self-evaluation on regulatory compliance with the DOE Property Management Regulations. A DOE validation of the High Risk Property Program could not be performed in FY-00 because the ANL system was not ready to be validated. Because there was a large variance between the ANL self-assessment rating and DOE's assessed rating, ANL was given the opportunity to provide additional supporting information. The additional information, provided by ANL, was evaluated and included as part of the final rating. DOE CH-AAO believes a rating of "Good" is consistent with the ANL performance in this area.

#### **4.5 Stakeholder Relations Expectation**

Communications and Trust was rated as "Outstanding", when compared to the performance expectations. The self-assessment did not uncover any significant issues that would modify that rating. ANL has worked cooperatively with DOE-CH on the continuation of the Community Leaders Round Table and outreach programs. ANL Management has supported the establishment of a notable, positive relationship between ANL and the local communities and stakeholders. CH-AAO agrees with the overall rating of "Outstanding".

#### **5.0 Other Issues**

Two general issues were identified during the DOE CH-AAO evaluation of ANL and the University of Chicago performance. These issues are the use of the Balanced Scorecard and the quality of the Self-assessments.

### 5.1 Use of the Balanced Scorecard

The pass/fail rating (2 grade rating system) for the Balanced Scorecard approach to performing the self-assessment makes it difficult for the University of Chicago/ANL and DOE CH-AAO to convert the ratings scores into the 5 grade Appendix B rating system (Outstanding, Excellent, Good, Marginal, Unsatisfactory). DOE CH-AAO has encouraged ANL and the University of Chicago to use the Balanced Scorecard for performing self-assessments. Several options are available for consideration:

- 1) continue to use and expand the use of the Balanced Scorecard rating system and eliminate the 5 grade rating system for the SAMs that use it. No grade will be provided for those SAMs but issues will be identified.
- 2) continue to use both the Balanced Scorecard and Appendix B rating systems while simultaneously devising a method to consistently convert from the 2 grade Balanced Scorecard approach to the 5 grade Appendix B approach. For example, in addition to the Balanced Scorecard identify specific, annual accomplishments for each of the business systems and measure progress against these accomplishments to determine a rating under the 5 grade rating system. Other approaches would be to measure progress against issues identified from past years' Balanced Scorecard Assessment, or ANL could provide stronger, more detailed justifications for the self-assessment ratings.

### 5.2 Quality of the Self-Assessments

The quality of the self-assessment process used by the University of Chicago/ANL appears to have mixed results. For example, in many cases, the "Opportunities for Improvement" identified last year (FY-99) are not specifically addressed as part of the most recent (FY-00) self-assessment. In other cases, these "Opportunities for Improvement" are stated verbatim from one year to the next. While it is possible that the issues that were identified last year in the self-assessment require more than a single year to resolve, the most recent self-assessment should explain what progress has been made in resolving these issues. In those cases, where a specific rating for a SAM was not clear (fell between two ratings) DOE CH-AAO uses the self-assessment as the tiebreaker. The quality of the University of Chicago/ANL self-assessments has been added to the Leadership Performance Measure for FY-01. The self-assessment process may require the development of specific guidance by the University of Chicago and provided to ANL functional leads.

For FY-00, it appears, in some cases, that the ANL self-assessment results are not realistic. Two specific examples were identified by DOE CH-AAO. ES&H and Personal Property were rated by ANL as "Outstanding", but DOE CH-AAO rated these as "Excellent" and "Good", respectively. DOE-CH-AAO understands that on occasion, there will be differences in the University of Chicago/ANL and DOE CH-AAO assessments, but these should be limited to areas where ANL would fall between two ratings.

## **6.0 Fee Determination:**

ANL achieved an Outstanding rating for the Science Performance Measure and the Infrastructure Performance Measure. The University of Chicago and ANL received a "Good" rating for the Leadership Performance Measure. The Environment, Safety and Health Performance Measure was rated as "Excellent". Attachment E uses the performance ratings to calculate a FY-00 fee of \$2,612,487.50. The final rating for General Operations SAMs is an "Excellent", however, no fee is tied to this rating.



TABLE 1  
SUMMARY OF FY- 2000  
PERFORMANCE MEASURE RATINGS

Appendix B Number	Functional Area	ANL Ratings Based Solely on Appendix B Performance Expectations	ANL Ratings based on the ANL Self-assessment	CH-AAO Summary Rating
I.1	Science	Outstanding	Outstanding	Outstanding
II.1	Leadership	Outstanding	Outstanding	Good
II.2	Environment, Safety, and Health	Outstanding	Outstanding	Excellent
II.3	Infrastructure	Outstanding	Outstanding	Outstanding

The Critical Operations Performance Measures are fee-bearing and include Environment, Safety, and Health, Leadership, and Infrastructure Functional Areas.

Table 2  
Summary of FY-2000  
System Assessment Measure Ratings

Appendix B Number	Functional Area	ANL Self Ratings Based Solely on Appendix B Performance Expectations	ANL Self-assessment Ratings	CH-AAO Summary Rating
III.1	Environment, Safety and Health	Outstanding	Outstanding	Excellent
III.2	Infrastructure	Excellent	Excellent	Excellent
III.3.a	Financial Management	Outstanding	Outstanding	Outstanding
III.3.b	Human Resources	Outstanding	Outstanding	Outstanding
III.3.c	Diversity	Excellent	Excellent	Excellent
III.3.d	Procurement	Outstanding	Outstanding	Outstanding
III.3.e	Personal Property	Outstanding	Outstanding	Good
III.3.f	Intellectual Property	Outstanding	Outstanding	Outstanding
III.3.g	General Law	Outstanding	Outstanding	Outstanding
III.3.h	Scientific and Technical Information	Outstanding	Outstanding	Outstanding
III.3.i	Information Management	Outstanding	Outstanding	Excellent
III.3.j	Safeguards and Security	Marginal	Good	Marginal
IV.a	Communications and Trust	Outstanding	Outstanding	Outstanding
IV.b	Technology Transfer	Outstanding	Outstanding	Outstanding
IV.c	Work for Others	Excellent	Excellent	Excellent
	<b>Summary for Operations</b>	<b>Outstanding</b>	<b>Outstanding</b>	<b>Excellent</b>

*ANL, through their self-assessment process determined that a weighted average of all the System Assessment Measures would be a low "Outstanding" rating. DOE CH-AAO has determined that a more appropriate weighted average is an "Excellent". DOE CH-AAO identified several weaknesses during the DOE CH-AAO assessment of ANL performance and, when considered as a whole, these weaknesses resulted in a change to an overall "Excellent" rating.*

## **7.0 References**

Appendix B “Performance Criteria and measures” of the Contract between the University of Chicago and DOE for the Management and Operation of Argonne National Laboratory (W-31-109-ENG-38)

The University of Chicago Self-assessment of “Critical Operations” and “General Operations” Performance dated November 15, 2000.

## **Attachment A**

### **Evaluation Process**

## Attachment A Evaluation Process

### 1.0 Background:

On May 24, 1995, the University of Chicago and the U.S. Department of Energy (DOE) established a new performance based contract for the management and operation of Argonne National Laboratory (ANL). The contract includes the use of performance measures agreed to each year in advance by DOE and the University of Chicago, as standards against which ANL's scientific, technical, operational, and managerial performance are evaluated. Performance measures are adjectivally rated. The definitions of the five adjectival ratings used in these evaluations are found in Table 1. While the selected performance measures are considered critical for measuring ANL's success, they are not viewed as a comprehensive basis for evaluating ANL performance. Each year, the University of Chicago/ANL is required to perform a formal, comprehensive self-assessment of their overall performance. This self-assessment examines the ANL performance against the performance measures and includes other factors that the University of Chicago/ANL believes are important to the success of the ANL mission. Finally, DOE conducts an assessment of ANL's performance in "Science" and "Operations". This assessment is based on the DOE CH-AAO review of the University of Chicago/ANL self-assessment, as well as, the results of the contractual performance measures, peer reviews, audits, appraisals, and other reviews conducted during the evaluation period. The DOE CH-AAO assessment determines the fee to be awarded by DOE to the University of Chicago under the contract.

Four performance periods have been completed under the performance-based contract. The first performance period covered the time frame from the time the new contract was signed on August 1, 1995 to the end of FY-96. The fifth performance period is for FY-00 and is covered by this report.

### 2.0 Process:

Each year, prior to the beginning of the fiscal year, performance measures are negotiated between the University of Chicago and DOE CH-AAO. For FY-00, a total of nineteen functional areas were selected for measuring ANL performance. ANL performance is divided into two distinct categories. The first category, Science includes one functional area while the second category, Operations includes 18 functional areas. Operations is further subdivided into Critical Operations and General Operations. The Science Performance Measure and the Critical Operations Performance Measures are fee-bearing. The General Operations area consists of System Assessment Measures (SAMs) that are not fee-bearing. Weighting factors are also agreed to for each of the functional areas prior to the beginning of the fiscal year. The ANL contract is modified each year to include the negotiated performance measures and their weights.

For the DOE CH-AAO assessment of the ANL "Operations" performance, a three-step process is performed annually at the end of the evaluation period. These steps are:

- 1) ANL evaluates their own performance against agreed to Performance Measures and SAMs.
- 2) ANL performs a self-assessment of their overall performance during the performance period. This self-assessment is based on their performance against the Performance Measures and SAMs evaluated under step #1 and also considers other relevant factors that directly affect performance.
- 3) CH-AAO conducts an assessment of ANL's performance based on the ANL self-assessment; validates the ANL performance against the contractual performance measures; and identifies and considers other relevant factors that directly influence the assessment of ANL's performance.

If there are disagreements between DOE CH-AAO and University of Chicago on functional area ratings, then DOE CH-AAO will meet with ANL functional area staff to determine if additional information is available that should be considered in the final evaluation and rating. Several sessions were conducted at the end of the FY-00 evaluation.

For the DOE-HQ assessment of the ANL "Science" performance, a three-step process is performed annually. These steps are conducted at the end of each evaluation period:

- 1) ANL performs a self-evaluation of their Science performance. This evaluation is based on input from formal peer reviews; a comparison of their performance against the performance measures; and, other information that they believe is relevant to an evaluation of their performance.
- 2) CH-AAO requests and receives appraisals from the DOE-HQ Program Organizations that fund significant Science work at ANL.
- 3) CH-AAO develops a single rating for Science based on the evaluations that were received from the DOE-HQ Program Offices. A final rating for Science is developed by weighting each DOE-HQ Program rating by the level of funding provided by that Program Office.

Where the level of funding does not warrant a separate rating or in the case that an evaluation is not received from the DOE-HQ Program Office, the peer review evaluations performed by ANL may be considered a primary source of information for the Annual Assessment Report. Based on the ratings developed for Science and Operations, DOE-CH-AAO prepares an Annual Assessment Report that summarizes ANL performance and establishes the basis for a fee determination.

### 3.0 Data Sources for DOE CH-AAO Assessment:

The ANL self-assessment and the individual ratings of ANL performance against the Performance Measures and System Assessment Measures are key data for input to the DOE CH-AAO assessment. DOE CH-AAO validation of the performance measures data is also performed. For the performance evaluations in the areas of administrative management and operations support, input comes from the CH-AAO staff, CH functional divisions and offices which support CH-AAO in oversight of particular laboratory functions, as well as from HQ functional units.

DOE CH-AAO has primary responsibility for assessing ANL performance under the Operations category. The DOE-HQ Program Offices have primary responsibility for

assessing ANL performance under the Science category. Table 1 and Table 2 of the DOE-CH-AAO Annual Assessment Report lists all of the functional areas and the adjectival ratings assigned by both DOE CH-AAO and ANL for FY-00. The DOE CH-AAO has responsibility for preparing the Annual Assessment Report and determining the total fee to be awarded based on the individual ratings.

Input to the Science summary appraisal was solicited from sources having a significant interface with the University of Chicago and ANL. Input from DOE-HQ Program Offices has been solicited from CH-AAO for providing feedback and rating ANL programs. Where possible, consolidated information for program ratings at the DOE Assistant Secretarial level was requested. The University of Chicago also conducts peer reviews for Science and this information is made available to DOE.

#### 4.0 Rating System

Outstanding	Significantly exceeds the standard of performance; achieves noteworthy results; accomplishes very difficult tasks in a timely manner.
Excellent	Exceeds the standard of performance. Although there may be room for improvement in some elements, better performance in all other elements more than offset this.
Good	Meets the standard of performance; assigned tasks are carried out in a completely acceptable manner - timely, efficiently and economically. Deficiencies do not substantively affect performance.
Marginal	Below the standard of performance; deficiencies are such that management attention and corrective action are required.
Unsatisfactory	Significantly below the standard of performance; deficiencies are serious, may affect overall results, and urgently require senior management attention, prompt corrective action is required.

NOTE: The Standard of Performance is that which is reasonably expected of Management and Operating Contractors on the basis of applicable orders and regulations and on observations of the performance of comparable R&D organizations. It includes, for example, making effective use of sound management, administrative, and business practices within existing funding constraints.